

[54] **AMINE TERMINATED POLYMERS AND THE FORMATION OF BLOCK COPOLYMERS**

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[58] Field of Search ..... 260/79.5 CR, 79, 79.7; 526/49

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[57] **ABSTRACT**

Polymers of anionically polymerized monomers such as conjugated dienes, vinyl substituted aromatics, olefinic type compounds, and heterocyclic nitrogen containing compounds, are produced and end capped with a polyisocyanate or polyisothiocyanate. Such end capped polymers are then reacted with compounds containing an amide such as lactam to give an imide type end group. The imide type terminated polymer is hydrolyzed to form a stable amine terminated polymer which may be utilized, as a composition of matter or stored for a short period of time to an extended period of time and reacted with other various polymers and monomers, or various combinations of monomers to form various block or graft polymers. That is, the amine polymer may be subsequently reacted with any amine reactive compound such as with a polyisocyanate or polyisothiocyanate and a lactam in the presence of a known anionic lactam polymerization catalyst to give a blocked nylon copolymer. Similarly, other block or graft copolymers may be obtained by reacting amine reactive compounds such as various monomers or polymers with the terminated amine polymer and examples of amine reactive polymers include polyepoxy, polyurea-aldehyde, polyphenolaldehyde, polyamide, polyurea-urethane, polyurethane, polyimide, polyurea and similar polymer segments. Of course, identical or similar polymer forming reagents such as monomers as well as identical or similar prepolymers may also be used.

**34 Claims, No Drawings**